PROBLEMS AND PROSPECTS OF FISH CULTURE IN MUBI, ADAMAWA STATE

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Abstract

This paper reviewed the major problems of fish pond culture in Mubi despite the abundant opportunities for fish pond culture. The prospects for fish pond are highlighted and a call to awaken people initiatives in Mubi region to invest into fish farming is made so that the nutritional and economical status of the region might be improved through aquaculture.

Introduction

Culturally, fish symbolizes good luck, prosperity and long life. Fish was once termed the poor man's protein because it was cheaper than beef, chicken, pork and other sources of meat (Pandey, 2004. Fish provides mankind's largest single source of animal protein which is rich in essential amino acids in a balanced form needed for body functions such as growth, development, building of body tissues and repairs of worn-out tissues. Fish protein apart from building the body tissues can also be used for the production of energy if insufficient energy yielding foods are eaten. Fish lipids contains high level of polyunsaturated omega-3 fatty acids which are of immense value in alleviating the incidence of heart diseases, rheumatoid arthritis and even cancer (Eyo, 2005). There are also appreciable quantities of vitamins necessary for the maintenance of good health and prevention of some deficiency diseases like vitamins A,D,E and K and mineral which include sodium, magnesium, phosphorous, calcium, potassium and iron, fluorine and iodine. Fish represents at least 55% of the animal protein consumed in the Nigeria diet (Olaniyi, 1998), hence, the pressure on the natural fisheries reserves which is steadily showing a downward trend due to gross overfishing for several years. The annual national fish demand of 1.5million metric tons so far outstrips the domestic supply of 0.4million metric tons (Dada, 2003)

Bulk of the domestic fish production in Nigeria comes from the capture fisheries dominated by artisanal fishery sub-sector which produces over 80%. Musa et al (2005), reported that the sub-sector contribution of aquaculture to the domestic production is an average of 6% where as the annual yield potential is put at 2.5million metric tons. It is therefore imperative to step up fish production through aquaculture in order to achieve fish self-sufficiency for the country.

Onuoha and Deekae (2006), sees aquaculture as principally a way of supplementing unpredictable production through capture or commercial fisheries. In Nigeria, aquaculture production has increased from 20,475 metric tons from 1983 (FDF, 1991) to 25,000 30,000 metric tones (Olaniyi, 2005

Mubi,the headquarters of Mubi local Government, Adamawa State, has a population of 151,072 NPC,2006 and a land areas of 4,728.77km2.Fish in different forms viz fresh, frozen, smoke and dried are sold in the local markets, indicating that the inhabitants are a fish loving people. Informal enquiries revealed that generally the fish are either from the wild or imported (frozen).In the face of dwindling catches from the natural waters, and the high potentials of aquaculture in stepping up fish production in Nigeria, it is needful to pose the following questions;

What is the status of fish-farming in Mubi? Are people aware of the potentials of fish-farming in the metroplolis? What can be done to boost the yield from fish-farms (if there are any)?

This paper attempts to describe the status of fish-culture in Mubi,with a view to dissect the prospects and prospects in farming fish in the area.

This paper is a rapid assessment of fish production with a special focus on fish culture at a macro level.

The specific objectives of this paper are to;

1. To analyze the factors that might have been responsible for the low participation in fish farming and make recommendations for the improvement of the activities.

2. Evaluate the status of fish farming aquaculture in Mubi.

3. To create awareness and to awaken initiatives of people towards making fish available through aquaculture.

STUDY AREA

Mubi is the headquarters of Mubi North local government Area. Mubi lies along longitude 13°15' east and 10°17' North. The 2006 National population census data reported the population of Mubi as 151,072 (NPC, 2006). It has a total land area of 4,728.77km^2. The major ethnic groups in the study area comprises of Fulani being the largest single ethnic group with smaller local tribes like Margi, Higgi, Gude and Fali,. Hausa and Fulani (to a lesser extent) are spoken as Lingua franca. The main stay of Mubi economy are trade, agriculture (farming and cattle rearing), it's positions as an administrative, service and institutional centre (Max, 1976). Local markets abound in Mubi and the people are engaged in commerce, enterprising and retailing. (Adebayo, 2005). Mubi falls within the Sudan savannah belt of the Nigerian vegetation zones. The agro-climatic condition of the area is such that mean annual rainfall ranges between 900mm to 1050mm. The months of May to September constitutes the wet season with highest amount of rainfall in August. The relatively higher amount of rainfall in Mubi compared to the central zone of Adamawa State is due to the orographic factor. The high mountain ranges in the metropolis induce orographic rainfall which contributes substantially to increase in rainfall (Adebayo, 2005).

The temperature of Mubi is warm to hot throughout the year with highest average temperatures of 33°c and minimum of 20°c. However, there is usually slightly cool period between November February with and average temperature of about 20°C which is usually accompanied by low relative humidity (Adebayo, 2005).

STATUS OF FISHERIES IN MUBI

Though there are no known statistical data and documents on fisheries and fisheries resources in Mubi, yet a congenial environment for fisheries development prevails in the area by way of high demand and price of fish. The people have high preference for animal protein in general and fish is not an exception.

A substantial quantity of frozen, fresh, sun-dried and smoked fish are imported on daily basis from different parts of the country, Lagos (frozen), Yola, Numan, Maiduguri and Baga into Mubi to partly fill the gap between supply and demand of fish which makes it expensive. This resulted into draining out of funds for commodity which should have been produced in the area itself.

Farming is the major employer of labour in Mubi, if there is fishing at all, it is of a minor importance because the rivers (Yedzeram, being the major river), stream and lakes in Mubi dry up during the dry season and fishing is then confined to the short wet season period. (Max Lock, 1976). The fishing activities is usually carried out by children and young men for consumption and recreation using hand, clap net, hook and line, and at times cast nets and where a substantial quantities is caught, it is sold in the neighbourhood. The projected Usman Dam which was designed to farm fish near Mubi did not come to fruition (Max Lock, 1976).

The Adamawa State Agriculture Development Programme (AADP) concentrated more on crop production and animal husbandry neglecting fisheries because there are no rivers where fishing activities are carried out in Mubi.

Thus, it is imperative that fish production in Mubi is increased by all possible means especially aquaculture to meet its requirement as well as to improve the socio-economic status of the area. Unfortunately, fish production was one of the neglected areas of agriculture on the area.

PRESENT STATUS OF FISH FARMING IN MUBI

Fresh water aquaculture is a growing sector nation wide though the rate of development is slow. It has high potential for development, to contribute to the human nutrition and employment generation in the country. Once known as a rural domestic activity, aquaculture has been gradually transformed into an important business in large cities like Lagos, Ibadan, Abeokuta, Akure, Benin, Kaduna etc and even in Mubi neighbouring town like Maiduguri and Yola. Fish farming in Mubi is still very at the infancy.

The Muritala Nyanko Fisheries Complex (Teaching and Research Farm of the Fisheries and Aquaculture Department of Adamawa State University, Mubi was the first to introduce fish farming in Mubi in 2006 and since then many private investors mainly civil servants has acquired the knowledge and have starting constructing fish ponds at experimental stages. Presently about five (5) home stead fish ponds operate in Mubi which are owned by individuals, they rely on water tankers to supply water for them and most purchase their fingerlings and feed from Yola and Maiduguri. Most of these fish farmers rely on the University for technical information, fingerlings and feed except for a farmer who started his farm earlier and claims that his consultant resides in Lagos. All fish ponds are stocked with catfish and practices monoculture system of aquaculture. Though, many more people has shown their interest in fish farming but are still not convinced of its profitability while some are scared by the high initial cost of constructing ponds. All existing fish farmers operate the flow through system of fish farming since it was the university's model of fish farming, the University though intends to go into mixed cropping and to produce fingerlings all year round on commercial scale using the recirculating system installed.

PROBLEMS OF FISH FARMING IN MUBI

Aquaculture (Fish farming) though being one of the fastest food production enterprise in neighbouring communities like Yola, Maiduguri but very low in Mubi is also constrained by a number of factors which can be categorized as: physical, technical, ecological and institutional factors.

One of the chief requirements of successful fish farming is suitable water. Through Mubi like any other part of the country is endowed with abundant water resources both at the surface and underground but the distribution of this resource is not readily available both in time and space. (Adebayo and Yonnana, 2005). Adebayo and Dayya (2005) noted that the availability of surface water varies from time to time. The climate controls the amount of water that is available at the surface and the surface at a given time. Similarly, the river regime is controlled by the climate of the region. During the wet season (May September), water is abundantly available both in the surface and subsurface virtually, all the rivers are dry during the dry season.

Mubi region is underlain by basement rock of the precambrain period. The ground water occurrence in the basement complex is very unpredictable because basement complex of such generally form a poorer reserviour of water so do not support the occurrence of 'water rich bore holes' which could have been an alternative sources of water.

Some of the technical constraints include lack of knowledge of the biology of culturable fish species, feeding habits, ponds construction, and management of stock (technical know-how).

Availability of fish feed of good quality especially pelleted feed is another major constraints in the metropolis despite the availability of fish feeds ingredient abundance in their local markets which was as a result of lack of skilled manpower in fish nutrition and lack of feedmills where the feed can be compounded.

Availability of quality fast growing fish seeds has been a major problem to intending fish farmers in Mubi due to lack of fish hatcheries.

Another major problem is the peculiarity of the weather. The cold season (Harmattan) lasts from November to March. During this season, the temperature drops so low to about 18^{0}C which is below the optimum temperature requirements for most tropical culturable fish species.

Other problems include lack of financial support, inadequate extension personnel and lack of support from government.

PROSPECTS OF FISH FARMING IN MUBI

Fish farming in Nigeria is still at the developmental stage but the pace of development is slow. Fish farming in Mubi metropolis is still in its infancy despite the abundance of opportunities for fish farming ventures in the Area. The chief requirements of successful fish farming are suitable water, adequate area for ponds, local supplies of feed and fish seeds, adequate and experience labour to operate the farm and a good

market for the fish thus, the prospects of fish farming was analyzed.

Mubi has a tropical wet and dry type of climate coded as Aw in Koppen's classification. The Agro-climatic condition of the area is such that mean annual rainfall is about 1000mm and a moderately warm temperature (Adebayo, 2005) which favours aquaculture.

Digil Pond

The pond was constructed in 1968 by the UBRBDA and handed over the Ministry of Agriculture Fisheries Department in 1975 had been abandoned long time ago before the university took over in 2005. The pond which is about 1.2 hectares has considerable water all year round could be stocked with fish and proper management activities put in place a substantial quality of fish could be produced from the pond. This pond also provides potential for development of sport fishing with respect to tourism and/or recreation.

Feed Availability

The prospects for feed availability for fish farming enterprise is bright in view of the wide variety of local food source which are in abundance in the market, some of these are rice bran, groundnut cake, fish meal, soya bean, blood meal etc and the presence of a standard feedmill belonging to the Department of Fisheries and Aquaculture of the Adamawa State University Mubi where fish feed will be produced at commercial scale solves the problem of where and how to compound fish feed.

Seed Availability

The current overall production of fish seeds for fingerlings is grossly inadequate though it is hoped that with the new Fisheries and Aquaculture Departmental Hatchery with a water recirculating system facility installed that can produce 200,000 fingerlings annually, production and sales of fingerlings all year round to private farmers would enhance investment opportunities in fish farming.

Man Power

Ita (1976) in a survey of inland fish culture activities in northern states of Nigeria observed that there is great demand for culture fish but notes that shortage of personnel in the various establishment limits expansions in aquaculture hence fin fish production. The considerable effort made by the Adamawa State University to create the fisheries and aquaculture department will help provide skilled manpower. Meanwhile in the short while, consultancy services offered by the university in the Area of fish farming will help prospective farmers in the establishment and management of their fish farms.

Market

An Adequate market prevails in the metropolis due to their preference for animal protein especially fish which was demonstrated by their massive turn out when the Fisheries Department of Adamawa State University sold their first batch its of cultured fish.

Integrated Fish Farming (Multipurpose Use of Resources)

Integrated fish farming involves the integration of fish farming with livestock, farming of agricultural crops, vegetables and "side-line" occupation (Eyo et al 2003). This method of fish farming is gaining ground with each passing day in Nigeria because of its economic viability, as "I utilize waste materials to produce protein for human consumption".

In Mubi, rice farming is very prominent, so fish cum rice production is a viable investment. Fish can be stocked in a rice plantation protected with small dwarf dykes in case of excessive flooding. The rice will derive water and nutrients from the waste of the fish and the crops serves as food to the fish especially herbivorous fish. Besides, periphytons on the crop may enhance yield of cultured fish species; also vegetable like spinach, water leaf, Amaranthus, can be planted on the dykes of ponds and the waste pond water can be used to water the vegetables.

CONCLUSION AND RECOMMENDATION

Considering the importance of food value of fish and its increasing demand, it has become imperative to implement a successful aquaculture development plan. Fish farming has been accepted as a potential source of employment for poor farmers, unemployed graduates and youths, as wealth could be created through fingerlings production, pond culture. It also acts as a tool for rural development by integration of fish farming and agriculture apart from playing a key role in the livelihood and nutrition of many people in rural areas. The following recommendations are therefore made:

First, is to popularize the aquaculture industry. The government and private organization should sponsor mass media programmes on fisheries aquaculture promotion to create awareness and to attract youths and new entrants. Also, government and other institutions can also do so by fully participating in fish farming.

Also, the general public, civil servants, retirees and other interested prospective fish farmers can be educated and enlightened on aquaculture and its potentials through series of seminars, workshops, conferences involving commercial scale fish farming to boost fish production in the metropolis.

Government should establish demonstration farms through ADP at local level to serve as pilot schemes for the farmers within the locality and from the yield, the profitability of aquaculture will be more evident when data and progressive economic information are produced. In this way, private entrepreneurs will invest and financial institutions may be willing to grant loans.

Government may lay more emphases on the infrastructure development, capacity building, facilitate finance for the enthusiastic entrepreneurs, farmer groups, NGOs etc to take up fish farming with the aim to increase production.

The government should provide incentives to perspective farmers through the coordination of the various stages of fisheries activities with the provision of general infrastructural like access road, portable water (bore holes), transport, etc.

Farmers should be encouraged to form groups so that they can pull their resources together to build bore holes that will sustain their farms instead of relying on water tankers.

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